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34. (New) The mouthguard of claim 1, wherein said base has an upper surface with a forward portion raised relative to arm portions thereof.

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35. (New) The mouthguard of claim 19, including a body of said "C-shaped" configuration, said arms having end extremities, said mouthguard further including a labial shield embedded in said front portion and extending therefrom along the arms to the extremities, said body and shield being formed of plastic material, with said shield being more rigid than said body.

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36. (New) The mouthguard of claim 35, wherein the shield is a single piece.

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37. (New) The mouthguard of claim 35, wherein said shield is formed of a set of shield members including a front part embedded in said front portion, and two rear parts separate from the front part, each rear part being located in a respective one of the arms.

REMARKS

Careful consideration has been given to the Official Action of January 31, 2002 and reconsideration of the application as amended is respectfully requested.

The Examiner has found the specification to be insufficient in failing to recite a detailed description for each figure shown in the drawings. The Examiner has called for submission of a substitute specification to overcome the objection.

It is respectfully submitted that the specification is complete as filed and contains an adequate detailed description of each of the embodiments disclosed in the figures of the drawing. Accordingly, there is no need for amending the specification and submitting a substitute.

In this respect, there are basically 4 features of the invention. The first feature is the mouthguard illustrated in Figs. 1-8 and described in the specification on page 3 beginning at line 17. The second feature is the shield of Figs 9-13 described in the specification on page 4 beginning at line 7. The third feature is the combination of the shield of Figs. 9-13 embedded in the mouthguard of Figs. 1-8 and illustrated in Figs. 14-20 and described at page 4 beginning at line 18. The fourth feature is the shield formed in three parts as illustrated in Figs. 21-23 and described in the specification on page 4 beginning on line 21. The fifth feature is illustrated in Figs. 24-30 illustrating the multi-part shield embedded in the mouthguard illustrated in Figs. 25-30 and described in the specification at page 4 beginning at line 23. The sixth feature is the embodiment of the specification is illustrated in Fig. 31 and is described in the specification beginning at page 4 line 26.

For the reasons given hereinabove, it is respectfully submitted that the specification satisfies 35 U.S.C. § 112 first paragraph and the requirement for submission of a substitute specification to add detailed description is not warranted.

Claims 12 and 13 have been cancelled leaving original claims 1-11 and 14-17. Claims 18-37 have been added as dependent claims.

Claims 1-6 have been amended to correct a typographical error although the sense of the claims remains the same as originally filed. Claim 9 has been similarly amended and further amended as to the substance thereof.

The specification has been amended to provide consistency of terminology throughout and to correct reference characters therein so that they are consistent with the drawing.

The Examiner has rejected the claims in the application under 35 U.S.C. § 112 first and second paragraphs and in light of the above, it is respectfully submitted that the rejections are overcome. When the claims are discussed hereafter, the reference numerals addressed to the particular structural limitations will be pointed out to show that there is clear support for them in the specification and drawings.

The Examiner has rejected claims 1-17 under 35 U.S.C. §102 as being anticipated by Kittelsen. The rejection is respectfully traversed as will be explained hereafter.

The reference relied upon by the Examiner fails to disclose or even remotely suggest the invention as defined in any one of the independent claims 1 to 9. However, claim 9 has been amended.

Claim 1 defines a mouthguard having a body with a "lower surface providing a lower occlusal table which is generally perpendicular" to the inner flange of the mouthguard. The surface to which this portion of claim 1 refers is the "surface 20" (page 3 line 31) shown in Figures 2 and 6. An occlusal table is that portion of a mouthguard that is engaged by the wearer's teeth. Accordingly, the lower occlusal table is engaged by the lower teeth of the wearer.

The above feature is not disclosed in Kittelsen or even suggested thereby. On the contrary, Kittelsen teaches that the inner flange (posterior portion 72) should be inclined to the occlusal table by an obtuse angle. As can be seen in Figure 5 of Kittelsen, the inner flange is substantially inclined and therefore would be inclined at an obtuse angle with respect to the occlusal table.

It is therefore respectfully submitted that the invention as defined in claim

1 is not anticipated by Kittelsen.

Independent claim 2 requires the mouthguard to have an upper occusual table that is inclined to the inner flange by an angle of between 100 and 120 degrees. In the preferred embodiment the upper occusual table is identified b the reference numeral 18 and is clearly seen in Figures 2 and 4.

The above feature of claim 2 is not disclosed in nor even suggested by Kittelsen. More importantly, Kittelsen is totally silent on any structural features in respect of the relative configuration of the upper occusual table and the inner flange.

Accordingly, Kittelsen does not anticipate the invention as defined in claim 2.

For Kittelsen to provide any information in respect of the invention as defined in claims 1 and 2 there would need to be an end elevation, preferably from the rear, so that the upper and lower occusual tables could be seen.

Claim 3 requires the mouthguard to have an outer flange with a thickened portion at its front. Claim 3 has been amended to define the thickened portion as extending "across" the front portion so as to act as a labial shield. This arrangement cannot be found in Kittelsen. In Figure 2 of Kittelsen, it is seen

that the outer flange is constant in width apart from projections 92 that extend rearwardly to engage the teeth. The central portion of the outer flange is of constant cross section and therefore fails to anticipate the invention as defined in claim 3. This is also particularly evident from Figure 4 of Kittelsen where the front portion of the Kittelsen mouthguard is seen in cross section.

In the preferred embodiment of the present invention, the thickened portion is best seen in Figure 2 and is identified by reference numeral 23. The description thereof can be found at page 3 lines 35 to 38

Claim 4 defines the present invention as having a base with a lower surface provided with a shield adjacent to the outer flange so as to extend substantially along each arm. In the present invention, this is best seen in Figures 2, 5 and 6 and is identified by reference numeral 22. It is described at page 3 line 34.

The above discussed feature of claim 4 cannot be found in Kittelsen. As is best seen in Figure 1 the mouthguard of Kittelsen has a lower surface provided with a step 102 that engages the teeth. The entire lower surface has no shield adjacent to the outer flange. Still further there is no suggestion of providing such a shield.

Claim 5 of the present application defines a mouthguard including a base

with an upper surface. The forward portion of the base is defined as being raised relative to the arms of the mouthguard. In the preferred embodiment, this is best seen in Figure 4 and is identified by reference numeral 26. It is described at page 3 lines 37 and 38.

Kittelsen does not disclose the above feature of claim 5. If Figures 4 and 6 of Kittelsen are examined no raised portion on the base can be seen. Accordingly, Kittelsen is not an anticipation of claim 5.

Claim 6 requires the mouthguard of the present invention to include a "labial shield" embedded in the front portion of the mouthguard body, which shield extends from the front portion along the arms of the mouthguard adjacent to the extremities of the arms. Still further the shield is defined as being formed of plastics material that is more rigid than the body of the mouthguard. In the description of a preferred embodiment, the shield itself is illustrated in Figures 9 to 13 and is identified by reference numeral 30. The shield 30 is illustrated, as embedded in the mouthguard body, in Figures 14, 15, 17 and 18 to 20. It is also described at page 4 lines 7 to 20.

Kittelsen fails to disclose the above discussed feature of claim 6. More particularly, Kittelsen merely discloses a shield at the front of the mouthguard. The shield terminates at the front portion and does not extend into the arms. Still further there is no disclosure that the shield is more rigid than the body.

Accordingly, Kittelsen fails to disclose two significant features of claim 6.

Amended claim 9 now requires the mouthguard to have "deformable key means" that is plastically deformed to retain the mouldable material within the mouthguard body.

First of all Kittelsen does not use a mouldable material with the mouthguard body. Still further the mouthguard body is not provided with plastically deformable key means. Kittelsen therefore fails as an anticipation as it does not disclose the above two features of claim 9.

The plastically deformable key means of the present invention is identified by reference numeral 55 in Figure 31. The key means is discussed at page 4 line 26 to page 5 line 9.

Kittelsen is directed to a particular mouthguard construction, that is a mouthguard that has a raised portion to support the posterior teeth (molar and bicuspid). No disclosure is given of any of the features which are defined in the above discussed independent claims of the present application.

Claims 7, 8 10, 11 and the added claims 18-37 are dependent from respective independent claims 1-6 and 9 and are drawn to further features which further distinguish the claimed subject matter and therefore are deemed

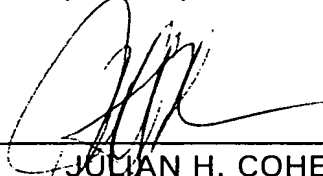
patentable.

It is further submitted that since Kittelsen is directed to a mouthguard construction which functions differently from that of the invention, there would be no basis for modification of Kittelsen to arrive at the claimed invention and thereby render the claims obvious under 35 U.S.C. § 103.

For the reasons given hereinabove, it is respectfully submitted that the claims now present in the application are allowable over the cited Kittelsen patent and the other art which has been cited by the Examiner but not applied to the claims.

Favorable reconsideration of the application and allowance of the claims is earnestly solicited.

Respectfully submitted,



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Marked-up Copy of the Specification

Page 1, amend paragraph 9 as follows:

A [forth] fourth inventive feature described herein includes the base having a lower surface provided with a shield adjacent the outer flange extending substantially along each arm.

Page 3, amend paragraphs 13 and 15 as follows:

In Figures 1 to 8 of the accompanying drawings, there is schematically depicted a mouthguard 10. The mouthguard 10 is of a "C-shaped" configuration so as to provide a front portion 11 from which there rearwardly diverges a pair of arms 12. The mouthguard 10 in transverse cross-section is of a "U-shaped" configuration so as to provide [a] an inner flange 13 joined to an outer flange 14 by means of a base 15.

The base 15 of the mouthguard 10 includes upper surfaces 18 extending along each arm 12, with each surface 18 providing an occusual table which is generally perpendicular to the flange 13. The surfaces 18 are inclined to the internal surface 19 of the [internal] inner flange 13 by an angle between 100 and 120 degrees, preferably 110 degrees.

Page 4, amend paragraphs 4, 5 and 6 as follows:

The shield 30 is of a "C-shaped" configuration so as to have a forward shield portion 33 with two rearwardly extending arms 34. The arms 34 have

extremities 35. The shield 30 further has a pair of front arches 36, with each arm 34 having a pair of arches 37.

The body 31 is of a "C-shaped" configuration so as to provide a front body portion 38 from which there rearwardly diverges a pair of arms 39. The body 31 is transverse cross-section is of a "U-shaped" configuration so as to provide an inner flange 40 joined to an outer flange 41 by means of a base 42. Each of the arms 39 has an extremity 43.

With the shield 30 embedded in the body 31 as illustrated in Figs. 14-20, the [board] shield portion 33 is embedded in the [board] body portion 38 of the body 31. The shield arms 34 extend within the body arm 39 so that their extremities 35 terminate just short of the arm extremities 43.

Amend the paragraph bridging pages 4 and 5 as follows:

In In Figure 31 there is schematically depicted a mouthguard 56 including a mouthguard body 50. The mouthguard body 50 is of a similar configuration to the previously described mouthguards. More particularly, the mouthguard body 50 has an inner flange 51 joined to an outer flange 52 by means of a base 53. The base 53 includes a layer 54 of material that is plastically deformable. More particularly, the layer 54 has a plurality of projections 55 which are plastically deformable to conform to the configuration of the user's teeth. In this embodiment the projections [54] 55 are hollow and cylindrical inform. Received

between the flanges 51 and 52 and covering the base 53 is a mouldable layer 57 constructed as follows: Firstly, the interior of the body 50 has applied to it an EVA copolymer coating. To this there is applied a thicker layer of vinyl containing polydimethylsiloxane. When the person to wear the mouthguard bites on the vinyl material, a dental impression results. However, the projections 55 also deform to provide a physical "key" to bind the vinyl layer to the body 50. In addition to, or as an alternative, the inner and outer flanges 52 and 52 may be provided with ridges 58 to again retain the vinyl layer in position. In this respect it should be appreciated that the vinyl layer may still be "peeled" from within the body 50 should the need arise. For example, when mouthguards are not professionally fitted there is a danger that the mouthguard will be applied to a person having a dental appliance. If the vinyl layer is not removable with respect to the body, considerable difficulty would be encountered in removing the mouthguard.

Page 5, amend paragraphs 2 and 3 as follows:

As an alternative or in addition to the various keying means such as the projections [50] 50 and ridges 58, the vinyl layer may be secured to the body 50 by means of an adhesive. The adhesive may be in liquid or tape form.

In manufacturing the mouthguard body [11] 50, internal surfaces of the mould may be acid etched in order to produce roughened surfaces (for example on the internal surfaces of the flanges 51 and 52) to aid in engaging and

retaining the vinyl layer within the body 50.

Marked-up Copy of the Claims

1. (Amended) A mouthguard of generally "C-shaped" configuration so as to provide a front portion and two arms [diverting] diverging rearwardly from the front portion, the mouthguard being of a "U-shaped" transverse cross-section so as to provide an inner and an outer flange joined by a base, wherein said base has a lower surface providing a lower occlusal table which is generally perpendicular to the inner flange.

2. (Amended) A mouthguard of generally "C-shaped" configuration so as to provide a front portion and two arms [diverting] diverging rearwardly from the front portion, the mouthguard being of a "U-shaped" transverse cross-section so as to provide an inner and an outer flange joined by a base, wherein said base has an upper occlusal table which is inclined to the inner flange by an angle of between 100 and 120 degrees.

3. (Amended) A mouthguard of generally "C-shaped" configuration so as to provide a front portion and two arms [diverting] diverging rearwardly from the front portion, the mouthguard being of a "U-shaped" transverse cross-section so as to provide an inner and an outer flange joined by a base, wherein the mouthguard includes a thickened portion of said outer flange being provided [at] across said front portion so as to provide a labial shield.

4. (Amended) A mouthguard of generally "C-shaped" configuration

so as to provide a front portion and two arms [diverting] diverging rearwardly from the front portion, the mouthguard being of a "U-shaped" transverse cross-section so as to provide an inner and an outer flange joined by a base, wherein the base has a lower surface provided with a shield adjacent the outer flange extending substantially along each arm.

5. (Amended) A mouthguard of generally "C-shaped" configuration so as to provide a front portion and two arms [diverting] diverging rearwardly from the front portion, the mouthguard being of a "U-shaped" transverse cross-section so as to provide an inner and an outer flange joined by a base, wherein said base has an upper surface, with the forward portion thereof being raised relative to arm portions thereof.

6. (Amended) A mouthguard of generally "C-shaped" configuration so as to provide a front portion and two arms [diverting] diverging rearwardly from the front portion, the mouthguard being of a "U-shaped" transverse cross-section so as to provide an inner and an outer flange joined by a base, wherein the mouthguard includes a body of a "C-shaped" configuration, with said arms having end extremities, said mouthguard further including a labial shield embedded in said front portion and extending therefrom through the arms to adjacent extremities thereof, said body and shield being formed of plastics material, with said shield being more rigid than said body.

9. (Amended) A mouthguard of generally "C-shaped" configuration so as to provide a front portion and two arms [diverting] diverging rearwardly from the front portion, the mouthguard being of a "U-shaped" transverse cross-section so as to provide an inner and an outer flange joined by a base, wherein internal surfaces of the body are provided with deformable key means to engage a mouldable material to be received within the body, the key means being plastically deformable to retain the mouldable material.

10. (Amended) The mouthguard body of claim 9, wherein [keying] means [are] comprises deformable projections.